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- (b) either
- (i) a gene encoding a repressor protein under control of said inducible promoter; or
- (ii) a gene encoding an inhibitor of the recombinase disrupter specified at (d) below under control of said inducible promoter;
- (c) a plant developmental gene promoter sequence activated at a predetermined stage of plant development, which, in the case of (b)(i) above, includes an operator sequence recognized by said repressor protein, the presence of which inactivates said plant developmental gene promoter; and
- (d) a gene encoding a recombinase disrupter of a plant characteristic produced by an inserted gene, the gene encoding the recombinase being under the control of said plant developmental gene promoter sequence, and the recombinase being adapted to excise a nucleotide sequence flanked by recombinase recognition sequences,

D¹ cont'd

wherein the recombinase gene is the FLP gene of the 2 micron plasmid of *Saccharomyces cerevisiae* and the recognition sequences are the FRT sequences which flank all or part of the inserted gene or its regulatory elements, wherein the inserted gene is a gene encoding a predetermined characteristic introduced into the plant by a recombinant DNA method,

wherein the presence or absence of the exogenous chemical inducer controls whether said characteristic is displayed in the plant, and

wherein said system does not act only to disrupt the biosynthesis of viable pollen.

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40. (Twice Amended) An expression system functional in a plant comprising:

- (a) an inducible promoter sequence responsive to the presence or absence of an exogenous chemical inducer;
- (b) either
- (i) a gene encoding a repressor protein under control of said inducible promoter; or
- (ii) a gene encoding an inhibitor of the recombinase disrupter specified at (d) below under control of said inducible promoter;
- (c) a plant developmental gene promoter sequence activated at a predetermined stage of plant development, which, in the case of (b)(i) above, includes an operator sequence recognized by said repressor protein, the presence of which inactivates said plant developmental gene promoter; and
- (d) a gene encoding a recombinase disrupter of a plant characteristic produced by an inserted gene, the gene encoding the recombinase being under the control of said plant developmental gene promoter sequence, and the recombinase being adapted to excise a nucleotide sequence flanked by recombinase recognition sequences,
- wherein the recombinase gene is the Cre gene of bacteriophage P1 and its recognition sequence or the lox sequences which flank all or part of the inserted gene or its regulatory elements, wherein the inserted gene is a gene encoding a predetermined characteristic introduced into the plant by a recombinant DNA method,
- wherein the presence or absence of the exogenous chemical inducer controls whether said characteristic is displayed in the plant, and

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control

wherein said system does not act only to disrupt the biosynthesis of viable pollen.

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D2

41. (Twice Amended) An expression system functional in a plant comprising:

(a) an inducible promoter sequence responsive to the presence or absence of an exogenous chemical inducer;

(b) either

(i) a gene encoding a repressor protein under control of said inducible promoter; or

(ii) a gene encoding an inhibitor of the recombinase disrupter specified at

(d) below under control of said inducible promoter;

(c) a plant developmental gene promoter sequence activated at a predetermined stage of plant development, which, in the case of (b)(i) above, includes an operator sequence recognized by said repressor protein, the presence of which inactivates said plant developmental gene promoter; and

(d) a gene encoding a recombinase disrupter of a plant characteristic produced by an inserted gene, the gene encoding the recombinase being under the control of said plant developmental gene promoter sequence, and the recombinase being adapted to excise a nucleotide sequence flanked by recombinase recognition sequences, wherein the recombinase gene is the Activator transposase of *Zea mays*,

wherein the presence or absence of the exogenous chemical inducer controls whether said characteristic is displayed in the plant, and

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D² cont'd

wherein said system does not act only to disrupt the biosynthesis of viable pollen.

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27. (Twice Amended) An expression system as claimed in any of claims 39-41, wherein the plant characteristic controlled by the system is essential to plant growth, whereby the presence or absence of the exogenous chemical inducer induces a response selected from the group consisting of growth to maturity, retarded growth and growth cessation at said predetermined stage.

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28. (Amended) An expression system as claimed in any of claims 39-41, wherein said inducible promoter sequence is functionally linked to and controls a repressor protein gene and in which the disrupter gene promoter includes an operator sequence recognized by said repressor protein, so that in the presence of the inducer the repressor protein is produced which interacts with the operator sequence disabling the plant developmental gene promoter and inhibiting expression of the disrupter gene.

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38. (Twice Amended) An expression system as claimed in any of claims 39-41, wherein said plant developmental gene sequence is a promoter selected from the group consisting of the gene promoters of malate synthase genes, germin genes, glyoxysomal enzyme genes, aleurone layer genes and carboxypeptidase genes.

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42. (Amended) An expression system as claimed in any of claims 39-41, wherein the inducible promoter is the promoter of the gene encoding the 27 kd protein of glutathione-S-

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transferase II.

43. (Amended) An expression system as claimed in any of claims 39-41, wherein said inducible promoter comprises the promoter of the AlcA gene, the system further comprising a gene capable of expressing the AlcR protein alcA and alcR being obtainable from *Aspergillus*.

44. (Amended) An expression system as claimed in any of claims 39-41, which comprises a repressor protein gene, wherein said repressor protein gene encodes the lac repressor or a repressor used by 434, P22 or lambdabacteriophages.

45. (Amended) An expression system as claimed in any of claims 39-41, which comprises a repressor protein gene, wherein said repressor protein is the tet repressor.

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46. (Twice Amended) An expression system functional in a plant comprising:

- (a) an inducible promoter sequence responsive to the presence or absence of an exogenous chemical inducer;
- (b) a gene encoding a protein inhibitor of barnase specified at (d) below and containing the coding region of the barstar gene, under control of the said inducible promoter;
- (c) a plant developmental gene promoter sequence activated at a predetermined stage of plant development;
- (d) a disrupter gene which encodes barnase, under the control of the plant developmental

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gene promoter sequence;

whereby the presence or absence of the exogenous chemical inducer controls whether barnase

disrupts cell survival in the plant.

47. (Twice Amended) An isolated plant genome transformed via an expression system as claimed in any of claims 39-41.

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48. (Amended) An isolated plant having transformed genome as claimed in claim 47.

49. (Amended) An isolated plant part having a transformed genome as claimed in claim

47.

50. (Amended) An isolated plant cell having a transformed genome as claimed in claim

47.

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amendment
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51. (Amended) Protected plant germplasm comprising a plant engineered to comprise the expression system of any of claims 39-41 comprising a gene capable of inhibiting development of the plant beyond a predetermined development stage, wherein application of the exogenous chemical inducer to the plant overcomes the inhibitory effect of the development inhibiting gene.

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52. (Amended) A plant or seed engineered to comprise the expression system of any of